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**BASF**

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July 8, 2019

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Director
Air, Pesticides, and Toxics Division
U.S. Environmental Protection Agency, Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

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COMPLIANCE & ENFORCEMENTRe: **40 CFR 61 Subpart FF, Notification**
BASF Corporation, Pasadena Plant

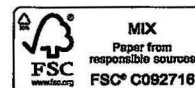
RN100225689

Dear Director:

Pursuant to 40 CFR 61.357(a) and 61.9, Notification of Startup, BASF Corporation (BASF) is providing notification for the 2-Ethyl Hexanol (2-EH) process unit which is applicable to the 40 CFR 61 Subpart FF, Benzene Waste Operations NESHAP (BWON) regulation.

The BASF Pasadena Plant (plant) conducted an internal audit in accordance with the Texas Environmental, Health and Safety Audit Privilege Act from October 2017 to April 2018 and discovered that the plant is applicable to the BWON regulation. At least three samples were taken at each potential source of benzene from February 2018 to March 2019. The total annual benzene (TAB) was determined to be less than 10 Mg/yr. Consequently, in accordance with 40 CFR 61.357(a), this letter report provides the following information, which represents the waste stream characteristics based on current configuration and operating conditions (per 40 CFR 61.357(a)(4)):

- (1) Total annual benzene quantity from facility waste, as determined in accordance with §61.355(a) of 40 CFR 61 Subpart FF equals 0.79 Mg/yr;
- (2) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions in accordance with the requirements of Subpart FF is attached as **Exhibit A**; and
- (3) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of Subpart FF, the following information has been added to the table, attached as **Exhibit A**: (i) whether or not the water content of the waste stream is greater than 10 percent; (ii) whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate; (iii) annual waste quantity for the waste stream; (iv) range of benzene concentrations for the waste stream; (v) annual average flow-weighted benzene concentration for the waste stream; and (vi) annual benzene quantity for the waste stream.

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Prior to conducting the audit, BASF did not believe that the plant was subject to BWON because no benzene in wastes, products, by-products, or intermediates was believed to be present. However, per the audit, BASF determined that benzene is formed at the plant by a catalytic process during the manufacture of 2-Ethyl Hexanol (2-EH). The resulting benzene is present in a by-product of that process (2-EH Lights), which is present in aqueous waste streams from that manufacturing process. Specifically, during the audit, select wastewater streams were sampled to confirm or deny the presence of benzene. From that sampling, BASF found the following four waste streams that contain benzene:

- 2-EH Lights/IBal Scrubber Wastewater – Aqueous wastewater generated during the manufacture of the 2-EH Lights by-product may contain a small amount of benzene resulting from the catalyst used in the process;
- G-673 Vacuum Overhead Ejector Condenser Drum Pump Discharge – The condensed vacuum overhead stream from the 2-EH Lights process may also contain a small amount of benzene resulting from the catalyst used in the process;
- 4602 Overhead from 2-EH Forerun Tower – The condensed Forerun Tower vapors from processing crude 2-EH may also contain a small amount of benzene resulting from the catalyst used in the process; and
- 4702 Overhead from 2-EH Lights Column – The condensed Lights Column vapors from processing 2-EH Lights may also contain a small amount of benzene resulting from the catalyst used in the process.

As shown in **Exhibit A**, process wastewater from the 2-EH Lights/IBal Scrubber, G-673 Discharge, 4602 Overhead, and 4702 Overhead contained benzene in appreciable quantities and were also determined to contain greater than 10% water. Therefore, these streams resulted in the plant being subject to the BWON rule.

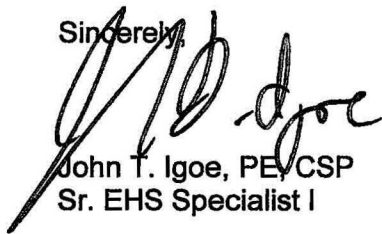
Based on the specific gravity results, the Refining Sump Pump Discharge, Wastewater Tank D-661, High Pressure Flare Knockout Pot and the Enal Area Sump Pump Discharge wastewater streams have a water content that is greater than 10%, however, these samples have less than a 0.25 mg/L (ppm) benzene concentration. Nonetheless, these streams are presented in **Exhibit A** for completeness and included in the total annual benzene quantity calculation.

Benzene was found in the Waste Fuels Tank D-74; however, this stream contains less than 10% water. Therefore, this waste stream was not included in the total annual benzene quantity calculation as specified in 40 CFR 61.342(a) but is presented in **Exhibit A** for completeness.

BASF will submit a report that updates the information listed in paragraphs (a)(1) through (a)(3) of 40 CFR 61.357(a) whenever there is a change in the process generating the waste streams that could cause the total annual benzene quantity to increase to 1 Mg/yr (1.1 ton/yr) or more.

Please contact the undersigned at 281-884-4476 [REDACTED] if you have any questions or require additional information.

Sincerely,



John T. Igoe, PE, CSP
Sr. EHS Specialist I

CC: Deputy Dir., TCEQ, Office of Compliance & Enforcement, Austin, TX
Air Section Mgr., TCEQ Region 12, Houston

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**Total Annual Benzene Determination
BASF Corp., Pasadena Plant**

Waste Stream Sample ID	Controlled, Yes or No	Water Content	Type	Benzene Concentration, ppm		Waste Stream Quantity		Annual Benzene Quantity (Mass Rate) (Mg/yr)
				Range	Annual Average	(gal/yr)	(Liters/yr)	
2-EH Lights/IBal Scrubber	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	1.16 - 3.14	2.19	234,000	885,786	0.0019
G-673A Discharge	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	0 - 5.04	1.14	7,040,482	26,651,111	0.0304
Refining Sump Pump Discharge	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	0.063 - 0.232	0.122	1,224,811	4,636,412	0.0006
Wastewater Tank D-661	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	0 - 0.0137	0.0048	854,578	3,234,928	0.0000
4602 Overhead	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	0 - 88.7	61.1	1,500,000	5,678,115	0.3469
HP Flare Knockout Pot	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	0 - 0.0573	0.02	46,800	177,157	0.0000
Enal Area Sump Pump Discharge	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	0 - 0.0423	0.01	312,000	1,181,048	0.0000
4702 Overhead	No, site TAB < 10 Mg/yr	>10%	Process Wastewater	82.7 - 295	143.26	750,000	2,839,058	0.4067
Waste Fuels Tanks D-74	No, site TAB < 10 Mg/yr	<10%	Process Waste	0 - 164	59.83	—	—	N/A (<10% Water)
Total								0.79

Note: N/A = Not Applicable